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ABSTRACT

The Maryland Center for Thinking Studies, established at Coppin State College in July 1988, and presented in this report, provides training and resources in the teaching of thinking and fosters research in thinking improvement. When fully operational, the Center will assimilate and contribute to research in cognitive instruction, disseminate the research, and apply it to the teaching of students from K-16, with special emphasis on minority and at-risk students and their parents and teachers. The Center is comprised of four units: Higher Education, K-12, Philosophy for Children, and Assessment. The units utilize research, teacher training, a graduate program, and publications. The Higher Education unit is training ten fellows, professors in various disciplines, to train other professors in their disciplines and to contribute to the ongoing scholarly discourse about thinking instruction. The Assessment unit tracks developments in thinking assessment and promotes research in classroom assessment, K-16. The K-12 unit sponsors and staffs a Saturday School for parents, children and teachers, promotes research, and, along with the Higher Education unit, will sponsor a graduate program in thinking instruction. The Philosophy for Children unit trains teacher trainers and teachers in the program. (KM)

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THE MARYLAND CENTER FOR THINKING STUDIES

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AASCU/ERIC Model Programs Inventory Project

The AASCU/ERIC Model Programs Inventory is a two-year project seeking to establish and test a model system for collecting and disseminating information on model programs at AASCU-member institutions--375 of the public four-year colleges and universities in the United States.

The four objectives of the project are:

- To increase the information on model programs available to all institutions through the ERIC system
- To encourage the use of the ERIC system by AASCU institutions
- To improve AASCU's ability to know about, and share information on, activities at member institutions, and
- To test a model for collaboration with ERIC that other national organizations might adopt.

The AASCU/ERIC Model Programs Inventory Project is funded with a grant from the Fund for the Improvement of Postsecondary Education to the American Association of State Colleges and Universities, in collaboration with the ERIC Clearinghouse on Higher Education at The George Washington University.

THE MARYLAND CENTER FOR THINKING STUDIES

ABSTRACT

Funded by the U.S. Department of Education, the State of Maryland, and the Abell Foundation of Baltimore, the Center provides training and resources in the teaching of thinking and fosters research in thinking improvement. When fully operational (The Center began partial operations in July, 1988), the Center will assimilate and contribute to the best research in cognitive instruction in the country, disseminate, and apply it to the teaching of students from K-16, with special emphasis on minority and at-risk students and their parents and teachers.

The Center is comprised of four units: Higher Education, K-12, Philosophy for Children and Assessment. Through research, teacher training, a graduate program, and publications, these units aim in different ways to accomplish the goals of the Center. Higher Education is training ten Fellows, Professors in different disciplines, to train other Professors in their disciplines and to contribute to the ongoing scholarly discourse about thinking instruction. Assessment tracks developments in thinking assessment, and promotes research in classroom assessment K-16. K-12 sponsors and staffs a Saturday School for parents, children, and teachers, promotes research, and, along with Higer Education, will soon sponsor a Graduate Program in Thinking Instruction. The Philosophy for Children unit trains teacher-trainers and teachers in this excellent international program.

THE MARYLAND CENTER FOR THINKING STUDIES

INTRODUCTION

The Maryland Center for Thinking Studies provides training and resources in the teaching of thinking and fosters research in thinking improvement. When fully operational (The Center began partial operations in July, 1988), the Center will assimilate and contribute to the best research in cognitive instruction in the country, disseminate, and apply it to the teaching of students from K-16, with special emphasis on minority and at-risk students and their parents and teachers.

The need for such a Center can best be seen by comparing three recent events: the discovery of deficits in the thinking abilities of American students, the explosion of new knowledge about how people actually think, and the growing awareness that minority, especially Black, students are the last to be taught higher order thinking skills. Recent national reports of educational progress, supplemented by local and state analyses, have uncovered a puzzling phenomenon: students in this country are doing better on "basic skills" but are losing ground on the improvement of higher order thinking abilities, such as interpreting a text, writing a persuasive essay, or solving a problem requiring more than a few steps.[1] As a result of such studies, efforts have been made to diagnose cognitive deficiencies much more carefully than had been done in the past.

At the same time, thanks to developments in artificial intelligence, psycholinguistics, cognitive psychology, the neurosciences, and philosophy, a new consensus has been forming about how the mind/brain processes information and how "experts"

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[1]See Lauren Resnick's summary of the research in **Education and Learning to Think** (Washington, D.C.: National Research Council, 1987). See also J. McTighe and J. Schollenberger, "Why Teach Thinking: A Statement of Rationale," in **Developing Minds**, ed. A. Costa, (Alexandria, Va.: Association for Supervision and Curriculum Development, 1985).

process more efficiently and deeply than "novices."[2] Both of these developments--the impetus to diagnose student thinking deficiencies and the program in "cognitive science"-- have fit together nicely, alliances between the basic research and the pedagogical need have been formed, and the glimmer of a theory of cognitive instruction has appeared.[3]

However, the population benefitting from these fruitful **ententes** has, until very recently, been students of high ability. Furthermore, there is some reason to believe that even if students of modest or poor ability **were** to be given thinking instruction, teachers are less likely to call upon them and to give them rich diagnoses of their difficulties.[4] This obtains in spite of research showing that proper training in thinking can aid at-risk students in improving traditional skills.[5]

It is from this approach to the research that the Center takes its mission: to bring the best research in cognitive instruction to those who need it most, to train their teachers and parents in the best ways of instructing such students to think better, and to encourage research into the best ways to teach thinking, especially among minority and at-risk students. Since the deficit in reasoning abilities and in testing success, especially among minorities, is a national as well as a local problem, federal and local support for this effort are justified.

NARRATIVE

Funded by the U.S. Department of Education, the State of Maryland, and the Abell Foundation of Baltimore, the Center has four units: Higher Education, K-12, Assessment, and Philosophy for Children.

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[2]See, for a readable summary of this research, Howard Gardner, **The Mind's New Science** (New York: Basic Books, 1986).

[3]See R. Marzano, **et. al., Dimensions of Thinking**. (Alexandria, Va.: Association of Supervision and Curriculum Development, 1987)

[4]See J.R. Brophy, "Research on the Self-Fulfilling Prophecy and Teacher Expectations," **Journal of Educational Psychology**, vol. 75 (5), 1983.

[5]See Barbara Presseisen, **Teaching Thinking and At-Risk Students.** (Philadelphia, Pa.: Research For Better Schools, 1987), and Ronald L. Houston, **The Education of Minority Students in Non-Urban Schools.** (Philadelphia, Pa.: Research For Better Schools, 1988).

Since it has just recently been established, the ensuing narrative largely describes planned activities.

Higher Education

Higher Education is currently training a cadre of 9 Fellows who will eventually travel to Historically Black Colleges and Universities to aid these faculties in assimilating the teaching of thinking into their teaching practices. As this task is highly discipline-specific, the Fellows have been selected from a variety of disciplines in the sciences, arts, humanities, and education. The five-year projection of activities for the Fellows is as follows:

FIRST YEAR: RESEARCH PHASE

The cadre of faculty will increase its knowledge of cognitive research in general by a)attending biweekly seminars; b)inviting local experts to discuss the critical thinking movement in general; c) by inviting national experts to deepen its knowledge of selected issues, and by traveling to conferences, national centers, or other places of interest to students of cognition.

SECOND YEAR: LOCAL TRAINING

The faculty cadre consolidate their knowledge by working critical thinking techniques into one of their courses. Ongoing discussions about this practice will occur bimonthly along with more theoretical discussions about the teaching of thinking. In the first semester, the Fellows will help each other develop syllabi; in the second, the newly-developed courses will be run and detailed evaluation will ocurr with the aid of videotaped classes, observations, team-teaching, etc.

THIRD YEAR: EXPANSION

1) Fellows develop workshops for other faculty members within their disciplines.
2) these workshops are given and evaluated on campus with Coppin faculty.

FOURTH YEAR: CONSOLIDATION

1) Workshops continue but off-campus to participant colleges and universities
2) Center develops a Higher Education Newsletter

FIFTH YEAR: GRADUATE PROGRAM

1) Graduate Program in Cognitive Instruction is fully staffed and operational
2) Graduate Program begun in second semester.
3) Grant proposals for future funding written.

Other activities of Higher Education will be to produce a

Newsletter for institutions whose faculties have been trained, foster research, other publications, videotapes of "best practices," and a research program for Higher Education faculty similar to that described below for K-12 faculty.

Finally, a Graduate Masters Program in Cognitive Instruction is being planned with the K-12 cadre. This Program, if approved by the Board of Regents of the University of Maryland System, would serve teachers, administrators, and policy makers in the state. A preliminary course sequence is as follows:

THEORY COURSES (required of all masters students)

Developing Students' Thinking Abilities (already in Graduate Curriculum)
Artificial Intelligence and Cognition
Linguistics and Cognition
Cognitive Psychology
Logic and Human Inference

IMPLEMENTATION COURSES (advised electives)
Administration of Thinking Programs
Thinking Instruction and Assessment
Thinking Instruction and Science Teaching
Thinking Instruction and Mathematics Teaching
Thinking Instruction and the Humanities
Teaching Thinking through Reading
Classroom Methods and Strategies for Critical Thinking

Teaching Thinking and Writing Across the Curriculum
Teaching Philosophy to Children (already in Graduate Curriculum)

In addition to these activities, Higher Education Fellows deliver papers and workshops to Conferences and have sponsored Conferences locally.

ASSESSMENT
Allied to the mission of Higher Education is the **Assessment** unit which offers workshops to faculty in the assessment of students' higher order thinking. This unit contains faculty already trained by the Educational Testing Service (on an SREB-FIPSE) grant to train teachers to write multiple-choice tests at higher levels of cognition. These faculty members will travel primarily to Historically Black Colleges and Universities to train faculty in this practice. Also, the unit is exploring more nontraditional methods of assessing thinking, including various performance assessment practices. The aim will be to disseminate those assessment tools found most workable. Dr. Elinor Santor is Director of this unit.

The K-12 UNIT

The state funds this unit exclusively. The **K-12** unit develops and offers programs and resources to students, parents, teachers, researchers, and other educators in the Maryland area who wish to improve students thinking abilities. To that end, the K-12 unit is developing partnerships with Baltimore city and interested counties. A participating school system will receive support from the Center including free services for teachers, parents, and students by means of the Graduate Program, a thinking improvement school (the Saturday Center), a parent education program, and on-site, in-county staff development. The K-12 unit is, of course, particularly interested in working with underachieving and minority students and the teachers who serve them.

The student instruction component, or the Saturday Center, is scheduled to open on a small scale in October of 1989 with approximately 40 students in grades four through eight who meet program criteria. Those students will improve their thinking with the aid of strategies such as metacognitive coaching, visual organizers, cooperative learning, and many other approaches. The curriculum is developed by the K-12 unit cadre, comprising the most experienced teachers of thinking in the state. The Center will also offer a parent training program called Thinking Families, which is designed to help parents help their children improve their thinking. And, as mentioned earlier, the K-12 unit will aid Higher Education in the planning and staffing of a Graduate Program.

One other major component which is currently in place is the research impetus, which seeks to develop effective assessment instruments and procedures for measuring thinking improvement. The K-12 unit also encourages classroom research by teachers; it offers awards ranging from $500.00 to $1,000.00 for classroom research which meets specified criteria and contributes to the improvement of thinking instruction in the classroom.

In addition to these activities, the K-12 unit will soon publish a Newsletter for participants, staff a Resource Center, and sponsor Conferences.

PHILOSOPHY FOR CHILDREN

This 20 year-old program is one of the most successful critical thinking programs in the nation and has demonstrably aided inner city students to increase their scores on national standardized tests. Owing to a grant from the National Endowment for the Humanities, Coppin State College has offered the program to the Baltimore City Schools for the last four years, and the philosophy program offers a minor and graduate courses. The purpose of this unit is to disseminate this excellent program throughout the state and to school districts allied to Historically Black Colleges and Universities through training of teacher-trainers and training of

teachers.

RESULTS

As the Center is so new, relatively little but preparation and planning have been inaugurated. However, the following can be pointed to:

1. The Center co-sponsored a national working invitation-only conference on assessing thinking, May 6-7, 1988 at the Stouffer's Harbourplace Hotel. One hundred twenty-four experts from around the country met to establish a state-of-the-art. Co-sponsors, besides the Center, included the Association of Supervision and Curriculum Development and the Association Collaborative for Teaching Thinking. Instead of Proceedings, the Conference will issue a monograph currently being written by Dr. Joan Baron of the Connecticut Department of Education, and videotapes. Plans are currently under way for a second national conference in September of 1989, which the Center will co-sponsor with the same co-sponsors.

2. A Conference on the Status of Teaching Thinking in the Community Colleges in Maryland was co-sponsored by the Center and Howard Community College on January 13, 1989. Participating Community Colleges pooled information and plan to collaborate on future projects with the aid of the Center.

3. On May 22, 1989, the Center is co-sponsoring a Conference on Critical Thinking for all colleges and universities in Maryland.

4. The Center has sponsored training in Philosophy for Children for seven philosophy professors from Historically Black Colleges and Universities in Maryland, the District of Columbia, and Pennsylvania.

5. Fellows have presented papers or workshops at the following conferences and colleges: The South Atlantic Philosophy of Education Society, the Montclair Critical Thinking Conference, the Intellectual Skills Development Conference, the National Association of Mathematicians Conference, Cheyney State University, Bowie State College.